



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,239	08/31/2001	Peiguang Zhou	KCC-16,163	1306

7590 08/13/2003
Senniger, Powers, Leavitt & Roedel
One Metropolitan Square, 16th Floor
St. Louis, MO 63102

12
EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/945,239

Applicant(s)

ZHOU ET AL.

Examiner

Jennifer A Boyd

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-107 is/are pending in the application.
- 4a) Of the above claim(s) 1 - 23, 34 - 69 and 83 - 107 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24 - 33 and 70 - 82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,9,11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 24 – 33 and 70 – 82 in Paper No. 10 is acknowledged. Claims of Group I (1 – 23, 35 – 38 and 40 – 57), Group III (58 – 69), Group IV (83 – 107) and Group V (34 and 39) have been withdrawn from consideration.

Claim Objections

2. Claim 24 is objected to because of the following informalities: Claim 24 is dependent on claim 1, which has been withdrawn from consideration. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 31 is rendered indefinite because it is unclear what "part of a single substrate" means. Does the Applicant intend that both layers – first and second – are each comprise only one layer? For the purpose of examination at this time, the Examiner will assume that the Applicant means that the first and second layers comprise only one layer each.

Claim Rejections - 35 USC § 102

Art Unit: 1771

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 24 and 31 – 33 are rejected under 35 U.S.C. 102(a) as being anticipated by Tanzer (WO 01/15646).

Tanzer is directed to an absorbent article having superabsorbent in discrete pockets on a stretchable substrate (Title).

As to claim 24, Tanzer teaches an *absorbent composite 44* comprising a selectively stretchable liquid permeable *first substrate layer 46* and a selectively stretchable *second substrate layer 48* (page 6, lines 1 – 5 and Figure 2). The *layers 46* and *48* can be secured by a water insensitive attachment means (page 6, lines 25 – 28). It should be noted that the adhesive composition of claim 1 that is referred to in claim 24 is not given any weight since it is a withdrawn claim.

As to claims 31 - 33, Tanzer teaches that a *neckable web 112* may be used for either the *first substrate layer 46* or the *second substrate layer 48* or both (page 9, lines 6 – 10). The *neckable web 112* may be a porous nonwoven material, such as a spunbonded web, meltblown web or bonded carded web (page 9, lines 23 – 25). The *neckable material 112* may be made of fiber forming polymers, such as polyolefins (page 9, lines 24 – 26), which are known in the art to be thermoplastic materials.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 25 – 30 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tanzer (WO 01/15646).

Although Tanzer does not explicitly teach the claimed static-peel-failure time of at least one hour as required by claim 25, static-peel-failure time of at least 8 hours as required by claim 26, static-peel-failure time of at least 24 hours as required by claim 27, relative accretion value of less than 1 as required by claim 28, relative accretion value of less than 0.5 as required by claim 29 and relative accretion value of less than 0.2 as required by claim 30, it is reasonable to presume that static-peel-failure time of at least one hour as required by claim 25, static-peel-failure time of at least 8 hours as required by claim 26, static-peel-failure time of at least 24 hours as required by claim 27, relative accretion value of less than 1 as required by claim 28, relative accretion value of less than 0.5 as required by claim 29 and relative accretion value of less than 0.2 as required by claim 30 is inherent to Tanzer. Support for said presumption is found in the use of like materials (i.e. a first layer attached to a second layer using an adhesive) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of static-peel-failure time of at least one hour as required by claim 25, static-peel-failure time of at least 8 hours as required by claim 26, static-peel-failure time of at least 24 hours as required by claim 27, relative accretion value of less than 1 as required by claim 28, relative accretion value of less than 0.5 as

Art Unit: 1771

required by claim 29 and relative accretion value of less than 0.2 as required by claim 30 would obviously have been present once the Tanzer product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to providing of this rejection made above under 35 USC 102.

10. Claims 70 – 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanzer (WO 01/15646) in view of Wang (US 6,329,468) and Hall (US 3,370,106).

As to claim 70, Tanzer teaches an *absorbent composite 44* comprising a selectively stretchable liquid permeable *first substrate layer 46* and a selectively stretchable *second substrate layer 48* (page 6, lines 1 – 5 and Figure 2). The *layers 46* and *48* can be secured by a water insensitive attachment means (page 6, lines 25 – 28). Tanzer teaches that a *neckable web 112* may be used for either the *first substrate layer 46* or the *second substrate layer 48* or both (page 9, lines 6 – 10). The *neckable material 112* may be a multilayer material (page 10, lines 1 – 5), therefore, can be considered a laminate.

Tanzer fails to teach that the water insensitive attachment means is an adhesive composition comprising an atactic polymer having a degree of crystallinity of less than about 20% and a number-average molecular weight of from about 1,000 to about 300,000 and an isotactic polymer having a degree of crystallinity of at least about 40% and a number-average molecular weight of from about 3,000 to about 200,000 as required by claim 70.

Wang is directed to a hot melt adhesive based on semicrystalline flexible polyolefins (Title) used for non-woven laminates for diapers and feminine care products (column 13, lines 20 – 25 and column 14, lines 35 – 40).

Art Unit: 1771

Wang discloses a hot-melt adhesive comprising flexible polyolefin polymers (FPO), which is essentially a block copolymer of atactic and isotactic polypropylene (column 2, lines 66 - column 3, line 10). The hot-melt adhesive is commercially available from the Huntsman Corporation under the trade name of RexFlex. Wang discloses some commonly known properties of isotactic and atactic polypropylene. For example, Wang teaches conventional crystalline polypropylene are high molecular weight polymers with a predominantly isotactic chain structure (column 2, lines 18-20) and, that due to the highly ordered crystalline nature of isotactic polypropylene, the degree of crystallinity is usually greater than 50%, as required by claim 76, with a melt flow rate ranging from .5-200 g/min (column 2, lines 30 - 35 and lines 40 - 42). On the other hand, amorphous or atactic polypropylene usually has a very low degree of crystallinity, around 4% or less as required by claim 75, with a heat of fusion of less than 10 J/g (the crystallinity is calculated by dividing the heat of fusion of the sample divided by the heat of fusion of the 100% crystalline polypropylene which is assumed to be 209 J/g - Johnson et al (US 2002/0010265, page 1, section 0012)). In addition, low molecular weight atactic or amorphous polypropylene is generally soft and has a melt flow rate of 2000g/10 min. RexFlex is known in the art as a relatively flexible polypropylene polymer that is at least about 30% atactic. It is preferred, however, that the majority of the polymer structure is crystalline. Examples of such relatively flexible polypropylene polymers include: RexFlex FPO W101 (commercially available from Huntsman Chemical Corporation (Kollma et al., US 2002/0098353 A1, page 3, sections 0028 and 0029)).

Art Unit: 1771

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the hot-melt adhesive composition of Wang in the absorbent composite of Tanzer motivated by the desire to produce a high-performance and low-cost hot-melt adhesive.

Tanzer in view of Wang fails to teach the molecular weights of the components of the adhesive composition as required by claim 70.

Hall, Jr. teaches a hot-melt adhesive blend comprising isotactic and atactic polypropylene (column 1, lines 46 - 50). The hot-melt adhesive composition is suitable to bond wood, paper, and textiles (column 1, lines, 35-36). The hot-melt adhesive composition preferably comprises a solid atactic polypropylene (essentially non-crystalline) having a molecular weight in the range of 15,000-60,000 and represents from 75 - 95 percent of the composition (column 1, lines 57 - 69 and column 2, lines 40 - 45). The isotactic (essentially crystalline) polypropylene component has a molecular weight ranging from 85,000 to 95,000 and represents from 5 - 25 percent of the composition (column 2, lines 19 - 25 and lines 39 - 45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the hot-melt adhesive composition of Hall, Jr. et al. as the hot-melt composition in the composite of Tanzer in view of Wang motivated by the desire to produce a hot-melt adhesive with excellent properties specifically for use in textile bonding applications.

As to claim 71, Tanzer teaches that the *neckable web* 112 can comprise a first layer of spunbonded polypropylene, a middle layer of meltblown polypropylene and a second layer of spunbonded polypropylene (page 10, lines 1 - 10). It should be noted that Tanzer teaches the use

Art Unit: 1771

of polypropylene as the middle layer, but does not specifically teach the use of polyethylene. However, polypropylene and polyethylene are both polyolefins and it would be obvious to interchange the two polyolefins because they are similar in properties and commonly used for the same products. It would have been obvious to one having ordinary skill in the art at the time the invention was made to interchange polyethylene for polypropylene in the middle layer of the laminate, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416.

As to claim 72, Tanzer teaches that either or both *layers 46 and 48* can comprise a *neckable web 112*, which may be a porous nonwoven material such as a spunbonded web.

11. Claims 70 and 73 – 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 6,329,468) and Hall, Jr. (US 3,370,106).

Wang is directed to a hot melt adhesive based on semicrystalline flexible polyolefins (Title) used for non-woven laminates for diapers and feminine care products (column 13, lines 20 – 25 and column 14, lines 35 – 40).

Wang teaches bonding three elastic strands stretched to 300% elastic (Lycra 740) between two layers of polypropylene non-woven fabric layers (column 11, lines, 15 - 25) as required by claims 70 and 82. The adhesive may be sprayed, meltblown, or applied as a bead (column 13, lines 54-56). Additionally, Wang discloses a hot-melt adhesive comprising flexible polyolefin polymers (FPO), which is essentially a block copolymer of atactic and isotactic polypropylene (column 2, lines 66 - column 3, line 10) as required by claims 79 and 81. It

Art Unit: 1771

should be noted that Wang teaches the use of atactic polypropylene and isotactic polypropylene in the adhesive composition, but does not specifically teach the use of polyethylene. However, polypropylene and polyethylene are both polyolefins and it would be obvious to interchange the two polyolefins because they are similar in properties and commonly used for the same products. It would have been obvious to one having ordinary skill in the art at the time the invention was made to interchange polyethylene for polypropylene as the atactic and isotactic components, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416. The hot-melt adhesive is commercially available from the Huntsman Corporation under the trade name of RexFlex. It should be noted that hot-melt adhesives are in a liquefied state that the time of application due to the nature of the adhesive as required by claim 73.

Wang discloses some commonly known properties of isotactic and atactic polypropylene. For example, Wang teaches conventional crystalline polypropylene are high molecular weight polymers with a predominantly isotactic chain structure (column 2, lines 18-20) and, that due to the highly ordered crystalline nature of isotactic polypropylene, the degree of crystallinity is usually greater than 50%, as required by claim 76, with a melt flow rate ranging from .5-200 g/min (column 2, lines 30 - 35 and lines 40 - 42). On the other hand, amorphous or atactic polypropylene usually has a very low degree of crystallinity, around 4% or less as required by claim 75, with a heat of fusion of less than 10 J/g (the crystallinity is calculated by dividing the heat of fusion of the sample divided by the heat of fusion of the 100% crystalline polypropylene which is assumed to be 209 J/g - Johnson et al (US 2002/0010265, page 1, section 0012)). In

Art Unit: 1771

addition, low molecular weight atactic or amorphous polypropylene is generally soft and has a melt flow rate of 2000g/10 min. RexFlex is known in the art as a relatively flexible polypropylene polymer that is at least about 30% atactic. It is preferred, however, that the majority of the polymer structure is crystalline. Examples of such relatively flexible polypropylene polymers include: RexFlex FPO W101 (commercially available from Huntsman Chemical Corporation (Kollma et al., US 2002/0098353 A1, page 3, sections 0028 and 0029).

Wang fails to teach the molecular weights as required by claim 70, the process temperature of the adhesive composition as required by claim 74 and the amounts of each polymer used in the blend as required by claim 77.

Hall, Jr. teaches a hot-melt adhesive blend comprising isotactic and atactic polypropylene (column 1, lines 46 - 50). The hot-melt adhesive composition is suitable to bond wood, paper, and textiles (column 1, lines, 35-36). The hot-melt adhesive composition taught by Hall, Jr., et al. preferably comprises a solid atactic polypropylene (essentially non-crystalline) having a molecular weight in the range of 15,000-60,000 and represents from 75-95 percent of the composition (column 1, lines 57 - 69 and column 2, lines 40 - 45). The isotactic (essentially crystalline) polypropylene component has a molecular weight ranging from 85,000 to 95,000 and represents from 5 - 25 percent of the composition (column 2, lines 19 - 25 and lines 39 - 45). Hall, Jr., et al. teaches for application to a surface, the adhesive is heated to a temperature in the range of 250°F to 365°F (column 2, lines 58 - 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the hot-melt adhesive composition of Hall, Jr. et al. as the hot-melt

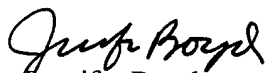
Art Unit: 1771

composition as taught by Wang motivated by the desire to produce a high-performance, low-cost hot-melt adhesive with excellent properties specifically for use in textile bonding applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jennifer Boyd
August 5, 2003

